

IGOLKIN, N.I., red.; GRIGORENKO, M.G., red.; STANKEVICH, V.A., red.;
TELEGIN, M.Ya., red.; SOROKIN, B.S., red.; ALEKSANDROV,
B.S., red.; BYALOBZHESKIY, G.V., red.

[Technical specifications for the maintenance and repair of
automobile roads] Tekhnicheskie pravila soderzhania i re-
monta avtomobil'nykh dorog (VSN 22-63). Moskva, Transport,
1965. 264 p. (MIRA 18:10)

1. Russia (1917- R.S.F.S.R.) Ministerstvo avtomobil'nogo
transporta i shosseynykh dorog.

I 24854-66 ENT(m)/ENP(j)/ENP(t)/ENP(k) IJP(c) JD/TW
 ACC NR: AP6006402 (A) SOURCE CODE: UR/0413/66/000/002/0145/0145
 AUTHORS: Kazak, M. A.; Bus'ko, N. V.; Vishnevskiy, M. V.; Igolkin, N. I. 36
 GRC: none B
 TITLE: Compensator for pipelines. Class 47, No. 178252 [announced by Leningrad
 Kirov Plant (Leningradskiy Kirovskiy zavod)]
 SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 145
 TOPIC TAGS: pipeline, pipe, ~~rubber elements~~
 ABSTRACT: This Author Certificate presents a compensator for pipelines, containing
 elastic, e.g., rubber elements, in the form of rings in contact with the pipe flanges
 connected by means of a hinged coupling. To increase the reliability and
 compensating ability, the rubber elements are situated in grooves machined in the
 pipe flanges, and a floating ring is installed between them (see Fig. 1).
 Card 1/2
 Card 2/2 dda UDC: 621.643.43

1ST AND 2ND DEPART.										1ST AND 2ND DEPART.									
PROCESSING AND PROPERTIES INDEX																			
GOLKIN, N. <div style="font-size: 2em; font-weight: bold; margin-top: 20px;">CA</div>					<div style="text-align: right; font-weight: bold; margin-bottom: 10px;">20</div> <p>By-products of the coke industry for construction and maintenance of improved roads. N. 1, <i>Insulin</i>. <i>Swedish</i> <i>Drug</i> 9, No. 10/11, 14-16 (1946).—Coking tar is successfully used for surfacing paved roads (black-top) in place of bitumen. In some aspects coking tar is even preferable because it penetrates the crushed stone base better, has a better adhesion to stone, consolidates better with already existing surfacing material, and can be applied at lower temps. (110-20° instead of 160-80° for bitumen).</p> <p style="text-align: right;">M. Hirsch</p>														
DETAILED LITERATURE CLASSIFICATION																			
DEPT. DIVISION										DEPT. DIVISION									
SECTION										SECTION									

IGOLKIN, N. I.

Remont i soderzhanie avtomobil'nykh dorog. [Road repair and maintenance]. Moskva,
Izd-vo dorozhno-tekhn. lit-ry Gushosdora MVD SSSR, 1950.

DLC: Slavic unclass.

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress,
Reference Department, Washington, 1952, Unclassified.

IGOLKIN N
IGOLKIN, N.I., inzhener

~~Technical and economic advantages of the mechanized brigade~~
method of road maintenance and repair. Avt.dor.17 no.1:9-10
Jl-Ag'54. (MLRA 8:10)

(Roads--Maintenance and repair)

IGOLKIN, N.I., inshener.

Support the initiative of youth in roadside improvement. Avt.dor.
20 no.1:17-18 Ja '57. (MIRA 10:3)
(Roadside improvement)

1806XIV. IV-1
IGOLKIN, N.I., inzh.; ALEKSEYEV, A.P., inzh.

Highway maintenance and repair service during the last 40 years.
Avt.dor.20 no.10:32-33 0 '57. (MIRA 10:12)
(Roads--Maintenance and repair--History)

IGOLKIN, N.I., inzh.

Persistently raise the economic effectiveness of maintaining and
repairing highways. Avt. dor. 21 no. 7:20-21 J1 '58. (MIRA 11:8)
(Roads, Concrete--Maintenance and repair)

IGOLKIN, N.I., insh.

Improve the organization of highway maintenance during the winter
months. Avt.dor. 21 no.9:4 S '58. (MIRA 11:11)
(Roads--Maintenance and repair) (Snow removal)

IGOLKIN, Nikolay Ivanovich, inzh.; GAYDUK, Kirill Vasil'yevich, inzh.;
GUDIMA, Vladimir Savvich, inzh.; KORSUNSKIY, Mark Borisovich, kand.
tekhn.nauk; NIKONOV, Petr Vasil'yevich, inzh.; SARKIS'YANTS, Georgiy
Aleksandrovich, inzh.; SARSATSKIKH, Prokhor Ignat'yevich, inzh.;
ORMATSKIY, M.V., prof., doktor tekhn.nauk, glavnyy red.; BYALO-
BZHESKIY, G.V., kand.tekhn.nauk, red.; IVANOV, S.S., red.; GALAKTIO-
NOVA, Ye.N., tekhn.red.

[Manual for road builders; maintenance and repair of highways]
Spravochnik inshenera-dorozhnika; soderzhanie i remont avtomobil'nykh
dorog. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transporta
i shosseinykh dorog BSFSR, 1960. 326 p. (MIRA 13:9)
(Roads--Maintenance and repair)

IGOLKIN, N.I., insh.

Follow strictly the classification of operations concerning
maintenance and repair of roads. Avt.dor. 23 no.1:18-19
Ja '60. (MIRA 13:5)

(Roads--Maintenance and repair)

IGOLKIN, N.I.

Rapid repairing of highways. Avt. dor. 24 no. 1:17-19 Ja '61.
(MIRA 14:2)

1. Glavnyy inzh. Glavnogo upravleniya shosseynykh dorog
Minavtozhosdora RSFSR.
(Roads—Maintenance and repair)

IGOLKIN, N.I., inzh.; TOROPIN, Yu.A.

Putting down rough wearing surfaces. Avt.dor. 24 no.5:17-18 My
'61. (MIRA 14:6)

(Road construction)

IGOLKIN, Nikolay Ivanovich; KOVRIZHNYKH, L.P., red.; GALAKTIONOVA, Ye.N.,
tekhn. red.

[Roughing road surfaces] Ustroistvo sherokhovatoi poverkhnosti
dorozhnykh pokrytii. Moskva, Avtotransizdat, 1962. 28 p.
(Road construction) (MIRA 15:7)

IGOLKIN, Nikolay Ivanovich; ALEKSEYEV, A.P., retsenzents; SILAKOV,
D.R., red.

[Maintenance and repair of automobile roads] Soderzhanie i
remont avtomobil'nykh dorog. Izd. 2., perer. 1 dop. Moskva,
Avtotransizdat, 1963. 368 p. (MIRA 17:5)

I 24854-66 EWT(m)/ENP(j)/ENP(t)/ENP(k) IJP(c) JD/HW
 ACC NR: AP6006402 (A) SOURCE CODE: UR/0413/66/000/002/0145/0145 36
 AUTHORS: Kazak, M. A.; Bus'ko, N. V.; Vishnevskiy, M. V.; Igolkin, N. I. B
 ORG: none
 TITLE: Compensator for pipelines. Class 47, No. 178252. [announced by Leningrad
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 SOURCE: Izobreteniya, promyshlennyye obraztzy, tovarnyye znaki, no. 2, 1966, 145
 TOPIC TAGS: pipeline, pipe, ~~compensator for pipelines~~
 ABSTRACT: This Author Certificate presents a compensator for pipelines, containing
 elastic, e.g., rubber elements, in the form of rings in contact with the pipe.
 flanges connected by means of a hinged coupling. To increase the reliability and
 compensating ability, the rubber elements are situated in grooves machined in the
 pipe flanges, and a floating ring is installed between them (see Fig. 1).
 Card 1/2
 Card 2/2 dda
 UDC 621.643.43

BATURIN, Dmitriy Pavlovich; IGOLKIN, N.V., kand.ekonom.nauk, red.;
MAL'CHIKOVA, V.K., red.; ONOSKO, N.G., tekhn.red.

[Wages on state farms] Oplata truda rabochikh sovkhoza.
Pod obshchey red. N.V.Igolkina. Leningrad, Lenizdat, 1961.
46 p. (MIRA 14:4)
(Leningrad Province--Agricultural wages)

PYAL'ZING, Eduard Genrikhovich, starshiy zootekhnik; IGOLKIN, N.V., kand.
ekon. nauk; LEBEDEV, V.A., red.; ONOSHKO, N.G., tekhn. red.

[Increasing production and decreasing costs of meat] Uvelichit'
proizvodstvo i snizit' sebestoimost' miasa. Pod obshchimi red.
N.V.Igolkina. Leningrad, Lenizdat, 1960. 31 p. (MIRA 14:12)
(Meat)

SHULOV, M.S.; IGOLKIN, V.N., redaktor; MULIKOVA, I.R., tekhnicheskiy redaktor ~~XXXXXXXXXXXX~~

[Booklet on safety measures for gas welders] Pamiatka po tekhnike bezopasnosti dlia gazosvarshchika. Moskva, Nauchno-tekhn. izd-vo avtotransportnoi lit-ry, 1954. 25 p. (MLRA 8:6)
(Oxyacetylene welding and cutting--Safety measures)

KITAYEV, Aleksandr Sergeyevich; IGOLKIN, V.H., redaktor; MAL'KOVA, N.V.,
tekhnicheskiiy redaktor

[Booklet on safety measures for workers handling storage batteries
in garages] Pamiatka po tekhnike bezopasnosti dlia rabochikh ak-
kumuliatornykh tsakhov avtokhoziaistv. Moskva, Nauchno-tekhn. izd-
vo avtotransportnoi lit-ry, 1954. 27 p. (MLRA 8:6)
(Automobiles--Batteries)

CHERNYGIN, Ivan Gavrilovich; IGOLKIN, V.N., redaktor; MULIKOVA,
tekhnicheskii redaktor.

[Safety measures in servicing and repairing automobiles] Tekh-
nika bezopasnosti pri tekhnicheskoi obsluzhivani i remonte
avtomobilei. Moskva, Nauchno-tekhn.izd-vo avtotransportnoi
lit-ry, 1954. 39 p. (MLBA 8:10)
(Automobiles-- Repairing)

POLOSIN-NIKITIN, S.M.; IGOLKIN, V.N., redaktor; KOVALIKHINA, N.F.,
tekhnicheskiy redaktor

[Earthmoving machinery in road construction] Zemleroi nye mashiny
na dorozhnom stroitel'stve. Moskva, Avtotransisdat Ministerstva
avtomobil'nogo transp. i shosseinykh dorog SSSR, 1954. 43 p.
(Earthmoving machinery) (MIRA 7:11)
(Road machinery)

ALEKSEYEV, Aleksandr Pavlovich; IGOLKIN, V.N., red.; GALAKTIONOVA,
Ye.N., tekhn. red.

[Traffic signals and signs] Dorozhnye signal'nye i pute-
vye znaki. Moskva, Avtotransizdat, 1954. 51 p.
(MIRA 16:7)

(Traffic signs and signals)

IGOLKIN, V. N.

CHUDAKOV, Konstantin petrovich,, kandidat tekhnicheskikh nauk; DOMBROV-
SKIY, N.G. doktor tekhnicheskikh nauk, prof., redaktor; IGOLKIN, V.N.
redaktor; MAL'KOVA, N.V., tekhnicheskiiy redaktor.

[Transporting and storing road machinery] Transportirovanie i khra-
nenie dorozhnykh mashin. Pod red. N.G. Dombrovskogo. Moskva, Nauchno-
tekhn. izd-vo avtotransp. lit-ry, 1955. 39 p. (MLRA 8:8)
(Road machinery)

VOLOTOV, Mikhail Mikhaylovich; PRUSOV, Vsevolod Vasil'yevich; IGOLKIN, V.N.,
redaktor; GALAKTIONOVA, Ye.N., tekhnicheskii redaktor

[Operation of S-243 automatic cement factories] Eksploataatsia
avtomatizirovannykh tsementobetonnykh zavodov S-243. Moskva,
Nauchno-tekhn. izd-vo avtotransp. lit-ry, 1956. 55 p.

(Concrete plants)

(MIRA 10:1)

(Automatic control)

ZHABIN, L.; IGOLKIN, V.

F.I. Shamraev's brigade has earned a commendable title.

Avt.dor. 22 no.11;6-7 N '59.

(MIRA 13:2)

(Road construction)

BELASHOV, Viktor Lukich; GRIDUNOV, Aleksandr Stepanovich; IGOLKIN, V.N., red.; KOVRIZHNYKH, L.P., red. izd-va; GALAKTIONOVA, Ye.N., tekhn. red.

[Road signs with light-reflecting surface]Dorozhnye znaki so svetootrazhaiushchei poverkhnost'iu. Moskva, Avtotransizdat, 1962. 18 p. (MIRA 15:9)

(Traffic signs and signals)

IGOLKIN, V.

For communist labor. Avt.dor. 25 no.5:30 My '62. (MIRA 15:6)
(Road construction)

IGOLKIN, V.N.; MESTECHKIN, M.M.

A simple method of linear combination of atomic orbitals for some
nonalternant hydrocarbon molecules. Vest. LGU 20 no.4:5-10 '65.
(MIRA 18:4)

1. 45689-66 INT(1)/T IJF(c)

ACC NR: AT6014772

(N)

SOURCE CODE: UR/2752/63/000/051/0015/0021

AUTHOR: Igolkin, V. N.

ORG: none*

TITLE: Analytical plotting of the trajectory of a controlled object in the avoidance of several oncoming vessels

SOURCE: Leningrad. Tsentral'nyy nauchno-issledovatel'skiy Institut morskogo flota. Trudy, no. 51, 1963. Vychislitel'naya tekhnika i avtomatizatsiya na morskoy flote (Computer technology and automation in the merchant marine), 15-21

TOPIC TAGS: ship navigation, collision avoidance trajectory, automatic control theory, algorithm

ABSTRACT: The phase movement of each of the objects is described by a system of ordinary differential equations

$$\dot{x}_i = f_i(x_i, u_i) \quad i = 0, 1, 2, \dots, m,$$

where $f_i(x_i, u_i)$ is a vector with the coordinates:

$$f_i^{(1)}(x_i, u_i), f_i^{(2)}(x_i, u_i), \dots, f_i^{(n)}(x_i, u_i).$$

Card 1/2

L 45686-36
ACC NR: AT6014772

The problem requires the selection of a control u_0 for the plant $l = 0$ so that the latter may move, in the shortest time, from one point of the phase space to another without colliding with any of the remaining objects in motion. It is assumed that the movement of the oncoming objects is governed by rigid laws so that the position of each of them can be indicated uniquely at any moment of time. Further requirements are that the solution be derived in a short time and that it be sufficiently close to optimal. Using the "maximum principle" of L. S. Pontryagin, this problem of the speed-optimal motion trajectory of a controlled plant from one point of phase space to another is solved in the plane, using a technique involving the derivation of pertinent equations for the various trajectory segments and, finally, the plotting of the optimal trajectory. The algorithm, so obtained may be employed to plot the optimal course (trajectory) of a vessel in its movement away from other vessels or objects which are pursuing a uniform, rectilinear motion of their own. By increasing somewhat the complexity of the formulas, it is also possible to plot the evasion course in the case of vessels whose movement is governed by strictly formulated rules permitting the preliminary calculation of each vessel's coordinates for any predetermined instant of time. An example of such rules might be the presently valid "Rules for the Prevention of Maritime Collisions." Because of the simplicity of its computational apparatus, this algorithm, even at the present state of the computer art, can serve as the basis for programming for evasive action at sea. Orig. art. has: 2 formulas.

SUB CODE: 17,12 / SUBM DATE: none / ORIG REF: 002

Card 2/2 *MT*

ACCESSION NR: AT4008632

S/3040/63/000/002/0105/0115

AUTHORS: Baluyev, A. N.; Bratchikov, I. I.; Balina, G. I.; Igolkin, V. N.; Kovrigin, A. B.; Marty*nenko, B. K.; Poroshin, B. S.; Surin, S. S.

TITLE: Compiling routine for an electronic digital computer using input language ALGOL

SOURCE: Leningrad. Universitet. Kafedra vy*chislitel'noy matematiki i vy*chislitel'ny*y tsentr. Vy*chislitel'naya tekhnika i voprosy* , programmirovaniya, no. 2, 1963, 105-115

TOPIC TAGS: digital computer, digital computer compiler, ALGOL computer language, computer language, complex algorithm, computer programming, machine language, binary code computer, computer input language, ALGOL

ABSTRACT: The input language and the algorithm of the programming

Card 1/2

ACCESSION NR: AT4008632

program developed in the Computation Center of Leningradskiy Universitet (Leningrad University), which is an abbreviated and modified variant of ALGOL-60, is described. The language differs from ALGOL in that the program as a whole constitutes one block and there are no descriptions of types; a separate class of identifiers is used for each class. The operators (particularly the procedure operators) and the description of the procedures are simplified and standardized. The input language itself and the operating principles of the programming program are described in detail and the algorithm for solving a system of linear algebraic equations of 50th order by the Gauss method, with choice of the principal element, is used as an example. Orig. art. has: 28 formulas.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: 15May62

DATE ACQ: 23Jan64

ENCL: 00

SUB CODE: CP

NO REF SOV: 002

OTHER: 000

Card 2/2

IGOLKIN, V.N.

Determining the optimum maneuver, with respect to time for the
passing of two ships. Trudy TSNIIMF no.55:64-67 '64. (MIRA 18:2)

IGOLKINA, L. I., CAND AGR SCI, "^{work}BREEDING OPERATIONS
WITH ORLOV RACE HORSE STOCK ON THE PERM' STUD FARM."
Moscow, 1960. (Moscow VET Acad of Min of Agr RSFSR).
(KL, 2-61, 215).

-217-

IGOLKINA, M.

Agricultural Extension Work

Scientific workers aid the collective farm. Kolkh. proizv., 12, No. 7, 1952.

Monthly List of Russian Accessions. Library of Congress October 1952 Unclassified.

IGOLKINA, N. S.

15-1957-7-8947

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7,
p 8-9 (USSR)

AUTHOR: Igolkina, N. S.

TITLE: On the Age of the Sand-clay Rocks of the "Zimnyy
Bereg" of the Beloye More (O vozraste peschano-
glinistykh porod "Zimnego berega" Belogo morya)

PERIODICAL: Materialy Vses. n.-i. geol. in-ta, 1956, Nr 14,
pp 169-173

ABSTRACT: In the "Winter shore" section, under Quaternary rocks,
there occurs a sequence of interbedded greenish-gray
and yellowish-gray, fine-grained sandstones, gray
siltstones, and blue-gray shales (35 m); beneath these
a dense, silty clay with a visible thickness of 35-40
m is exposed, with rock waste beyond. No fossils had
previously been discovered in any of these rocks.
Similar beds uncovered in a series of deep explora-
tory drill holes (at Arkhangel'sk, Ust'-Pinega,

Card 1/2

15-1957-7-8947

On the Age of the Sand-clay Rocks of the "Zimnyy Bereg" of the
Beloye More (Cont.)

Kamenistyy Priluk, and Vologda) have been referred to the
Lower Cambrian by the discovery of worm remains of Sabel-
lidites cambriensis Jan.

V. G. Rikhter

Card 2/2

IGOLKINA, N.S.

Pre-Cambrian sediments of the mantle in the northern Russian
Platform. Inform.sbor. VSEGEI no.43:3-10 '61. (MIRA 14:12)
(Rocks, Sedimentary)
(Russian Platform—Geology, Stratigraphic)

IGONETS, Z.Ya., assistant

Childbirth at home. Trudy KMI no.10:64-66 '63.

Our experience in treating erythrblastosis fetalis. Ibid.:302-305
(MIRA 18:1)

1. Iz kafedry akusherstva i ginekologii (zav. kafedroy - prof.
I.F.Pantsevich) Kalininskogo gosudarstvennogo meditsinskogo
instituta.

IGOL'NIKOV, A.F.

Program controlled charging systems for blast furnaces at the
Kuznetsk Metallurgical Combine. Bul. TSNIICM no.15:37-40 '57.
(MIRA 11:5)

1. Kuznetskiy metallurgicheskiy kombinat.
(Kuznetsk Basin--Blast furnaces) (Electric control)

KOROVINA, Zinaida Pavlovna; IGOL'NIKOV, Grigoriy L'vovich;
POTEMKIN, P.I., kand. ekon. nauk, otv. red.;
SNITSARENKO, A.A., red.

[Overall improvement in planning in industry] Kompleksnoe
sovershenstvovanie planirovaniia v promyshlennosti, Novo-
sibirsk, Red.-izdatel'skii otel Sibirskogo otd-niia AN
SSSR, 1964. 44 p. (MIRA 17:9)

KARAYEV, A.I.; ALIYEV, R.K.; OSINA, Ye.Ye.; GAUZNER, Ye.G.; IGONETS, G.Ya.

Industrial method of manufacturing triprotamine sulfate from
sturgeon milt. Izv.AN Azerb.SSR no.1:101-110 Ja '57. (MLRA 10:5)
(Krasnodar Territory)--Snails)

ALIYEV, R.K.; CAUZER, Ye.G.; IGONETS, G.Ya.; AKHVERDIYEV, S.M.

"Hepavit," a new vitamin-rich liver preparation, its raw materials
and production. Izv.AN Azerb.SSR.Ser.biol.i med.nauk 3:95-100 '61.
(MIRA 14:7)

(Liver extract)

IGOL'NIKOV, A.I., tekhnik

Driver who has a million kilometers to his credit. Transp. stroi.
14 no.8:36 Ag '64. (MIRA 18:1)

KOSTRYUKOVA, I.M., kand.med.nauk; KUSHNIRSKAYA, Ye.S., kand.med.nauk;
IGONETS, Z.Ya., assistant

Placental presentation according to five-year data of obstetric institutions in Kalinin. Trudy IGM no.10:61-63 '63.

1. Iz kafedry akusherstva i ginekologii (zav. kafedroy - prof. I.F.Pantsevich) Kalininskogo gosudarstvennogo meditsinskogo instituta.

TELEGIN, K., mayor; IGNIN, A., kapitan, voyenny letchik pervogo klassa

With the first approach to target. Av. i Kosm. 47 no. J2866-70
D '64, (MIRA 18:1)

160VIN, A. A.

15807

AVRONS.

Myrdal, S. E., Reduction, L. A., T. J. J.

TITLE:

Investigation of the Hardening Process of Methylol Polymers

Reel

FRIDOLIN: Plastobonding maser, 1960, No. 1, pp. 20 - 22

NOTE: In Ref. 2, the authors suggest that the hardening of methylol polymers takes place by the formation of ether cross links ($\text{CH}_2\text{-O-CH}_2$) or methylene cross links ($\text{-CH}_2\text{-CH}_2\text{-}$). The present paper gives a report on the optical-analytical investigation of the hardening process. The following substances were used: polymeric resin of the type 34/10 (molecular weight 15,000) obtained by polycondensation of formaldehyde with $\text{H}_2\text{N(CH}_2\text{)}_6\text{NH}_2$; further $\text{H}_2\text{N(CH}_2\text{)}_6\text{NH}_2$ and $\text{H}_2\text{N(CH}_2\text{)}_4\text{NH}_2$ were also used. The type 34/10 was dissolved in water, and the solution was treated with 34/10 with particles in ethanol, or actually are given in a table.

Card 1/2

Fig. 1, 2 show the infrared spectra within the range 1800 - 1500 cm^{-1} and 1000 - 1500 cm^{-1} before and after hardening (10 hours heating to 100°C) of the resin, which were recorded by means of a Beckman IR-10 infrared spectrometer. The absorption bands at 1500-1600 cm^{-1} before and after hardening, the absorption of the various resins were rather similar to one another. The bands of the methylol- and ether groups (1000 - 1100 cm^{-1}) weakened during hardening; no bands characteristic of the $\text{CH}_2\text{-O-CH}_2$ groups occurred. Therefore, cross linking took place by the formation of methylene bonds. The authors mention a paper by D. E. Shriver. There are 2 figures, 1 table, and 6 references; 3 Berlet and 1 m.

Card 2/2

RAYBURN, S.M.; RODIVILOVA, L.A.; VLASOVA, K.N.; SHABADASH, A.N.; IGONIN, A.A.

Study of the solidification of methylol polyamide resins. Plast.
massy no.7:20-22 '60. (MIRA 13:10)
(Resins, Synthetic) (Polyamides)

IGONIN, A.M.

Histogenesis of plasma-cells in experimental Q fever in guinea pigs.
Biol.eksp.biol.i med. 47 no.8:110-113 Ag '59. (MIRA 12:11)

1. Predstavlena deystvitel'nym chlenom AMN SSSR P.F. Zdrodovskim.
(Q FEVER pathol.)
(PLASMA CELLS)

IBONIN, A.M.

Morphological changes in the lymph nodes and spleen of guinea pigs repeatedly infected with *Rickettsia burneti*; on morphological aspects of immunity. Biul. eksp. biol. i med. 50 no.12:65-68 D '60.

(MIRA 14:1)

1. Predstavlena deystvitel'nym chlenom AMN SSSR P.F. Zdorodovskii.
(RICKETTSIA) (SPLEEN) (LYMPHATICS)

IGONIN, A. M., Cand. Medio. Sci. (diss) "Some Questions of Morphology of Immunogenesis for Experimental Ku-fever Among Porposes," Moscow, 1961, 15 pp. (Acad. Med. Sci. USSR) 250 copies (KL Supp 12-61, 285).

IGONIN, A.M.; ZEMSKOV, Ye.M.

Morphology of the active and inhibitory phases of immunity in guinea pigs immunized with heated vaccine from the paratyphoid A bacillus. Biul. eksp. biol. i med. 52 no.11:80-84 N '61.
(MIRA 15:3)

1. Predstavlena deystvitel'nym chlenom AMN SSSR N.N.
Zhukovym-Verezhnikovym.

(SALMONELLA PARATYPHI)
(VACCINES) (IMMUNITY)

IGONIN, A. M. (Moskva)

Plasmatic cells (their morphology, functions and origin). Arkh.
pat. no.4:3-13 '62. (MIRA 15:4)

(LYMPHOID TISSUE)

GUDIMA, O.S.; IGONIN, A.M. (Moskva)

Clinical morphological and immunological parallels in guinea pigs
infected with and virulent strains of *Rickettsia burneti*. Arkh.
pat. 24 no.8:50-56 '62. (MIRA 15:8)

(RICKETTSIAL DISEASES)

IGONIN, G.

AID - P-197

Subject : USSR/Engineering

Card : 1/1

Author : Igonin, G. (Drilling Foreman of the Stavropol'burneft Trust)

Title : Our Experience on Oil Well Drilling with Water Circulation

Periodical : Neft. khoz., v. 32, #2, 61-64, F 1954

Abstract : Well drilling in the Zhigulev mountains is described. The clay solution was successfully substituted by water circulation. The analysis of work is presented in two tables.

Institution : None

Submitted : No date

IGONIN, I.

Sunflowers

New variety of Sunflower, Saratov 10. Kolkh.proiz. 12 no. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, November, 1952. Unclassified.

IGONIN, I.

Sunflowers

Late fall sowing of sunflowers. Kolkh. proizv. 12 no. 8, 1952.

Monthly List of Russian Accessions, Library of Congress. November, 1952. Unclassified

ABDRAZAKOV, R.G.; ~~IGONIN, I.A.~~, glavnyy metodist; KHOKHLOV, V.D., otvetstvennyy redaktor; ROSEBUSHANSKAYA, V.A., redaktor; BALLOD, A.I., tekhnicheskiiy redaktor

[The "Kirghiz S.S.R." pavilion; a guidebook] Pavil'on "Kirgizskaya SSR"; putevoditel'. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 25 p.

1. Moscow, Vsesoyuznaya sel'skokhozyaystvennaya vystavka, 1954-
2. direktor pavil'ona (for Abdrazakov)
(Kirghizistan--Agriculture)
(Moscow--Agricultural exhibitions)

IGONIN, I.A.

Kirghiz S.S.R. Nauka i pered. op. v sel'khoz. 7 no.11:28-29 N '57.
(MLRA 10:11)

1. Glavnyy metodist pavil'ona "Kirgizskaya SSR" Vsesoyuznoy sel'sko-
khozaystvennoy vystavki.
(Kirghisistan--Agriculture)

Igonin, L. A.

USSR/Chemistry - Plastics

FD-877

Card 1/1 Pub.50 - 10/24

Author : Gintsberg, E. G., Igonin, L. A.

Title : Polarographic determination of styrene in polystyrene

Periodical : Khim. prom., No 6, 355-357 (35-37), Sep 1954

Abstract : Developed a method for the polarographic determination of traces of the monomer in polystyrene (a content of styrene in the plastic accelerates deterioration). In the procedure which has been devised, the sample is dissolved in benzene, the resulting solution is diluted with a solution of tetrabutylammonium in alcohol, and a polarographic determination of styrene is carried out. Four references, all USSR, all since 1940. One graph, 2 tables.

Institution : Scientific Research and Planning Institute of Plastics

Submitted :

IGONIN, L. A.

USSR/ Physics - Spectral analysis

Card 1/2 Pub. 43 - 55/62

Authors : Shabadash, A. N., and Igonin, L. A.

Title : Quantitative analysis by means of ultraviolet absorption spectra of vapors

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, 733-734, Nov-Dec 1954

Abstract : It is explained that ultraviolet absorption spectra of vapors of many organic compounds (particularly aromatic) are much more selective than the spectra of solutions of these compounds. Quantitative analysis methods by means of ultraviolet absorption spectra of vapors are described.

or the absorption chamber used in the analysis must be extended to 4-5 m.

Institution : State Sc. Research and Planning Inst. of Plastics

Submitted :

Card 2/2 Pub. 43 - 55/62

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, 733-734, Nov-Dec 1954

Abstract : The method makes it possible to analyze not only the substances which became completely vaporized in the chamber but also the vapors which are in equilibrium with the condensed phase. Three references: 1 USA, 1 English and 1 French (1941-1946). Drawing.

GONIN, L. A.

CH. V. A. Karpis (L. Ya. Karpis), Research Phys. Chem. Inst., Moscow, U.S.S.R. *Zhur. fiz. khim.* 1955, 29, 203 (1955).—Product of condensation of 6 moles PhOH with 5 moles CH_3O of mol. wt. 350–400 was mixed with x% hexamethylenetetramine (I) in EtOH, the soln. was evapd., and the residue compressed to a tablet. The increase in the deformability of these tablets with temp. was rapid at $x < 2\%$, i.e. resins coat. little I became viscoplastic at higher temps. (e.g., 60°), while the deformability of resins with $x > 8\%$ little depended on temp. between 100° and 200° . PhOH and dioctyl sebacate are plasticizers of these resins. In the condensation of PhOH- CH_3O resins with I, linear chains with infrequent cross linkages form; they are collapsed in the viscous mass of the low-mol. resin. **J. J. Eklund, Structural analysis of novolaks.** C. Boelhouwer, H. I. Waterman and F. H. W. Wilbrands (Tech. Univ., Delft, The Netherlands).

I may

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in the vacuum range of the infrared region. J. J. Petrella
Structural analysis of novolaks. C. Boelhouwer, H. I.
Waterman and E. H. W. Wilmsma (Techn. Univ., Delft,
Neth.). *J. Polymer Sci.* 17, 411-15 (1966).—The structures
of certain novolaks, prepd. by polycondensation of HCHO
with phenol, *p*-cresol, and *m*-cresol, resp., were investigated.
The novolaks were transformed into satd. hydrocarbons,
thus expelling O by a relatively mild high-pressure hydro-
genation (300°, 250 atm.) by using 100% by wt. of Ni-Cu
on kieselguhr catalyst. It can be expected that this treat-
ment does not alter the structural frame of the mols. From
ultimate analysis and phys. consts. of the hydrocarbons,
conclusions were made as to the structure of the novolaks.
They are linear thermoplasts; no extra rings are present.

N. J. Petrella

⑤

MA
MT

IGONIN, L. A., and GLUKHOV, E. E.

"New instruments for the thermochemical study of highpolymers," a paper presented at the 9th Congress on the Chemistry and Physics of High polymers, 28 Jan-2 Feb 57, Moscow, Plastics Research Inst.

B13,084,395

L'GONIN, L.A.

PRIKHOT'KO, A.F.

24(7)

3

PHASE I BOOK EXPLOITATION 809/1365

L'vov, Universitet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 3,000 copies printed. (Series: Its: Fizicheskyy sbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Jazov, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Lavsterg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinakiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitakiy, V.G., Candidate of Technical Sciences, Rayakiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovakiy, L.K., Candidate of Physical and Mathematical Sciences, Miliyanovich, V.S., Candidate of Physical and Mathematical Sciences, and Olsherman, A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

Yeliseyev, Yu. A., L.A. Igumov, and A.M. Shabadan: Vacuum Containers for the IR-1 Infrared Spectrometer

371

Gashkovskiy, V.P. Complex Structure and Nature of the Absorption Spectra and Fluorescence of Magnesium Pthalocyanine and Chlorophyll

372

Gurinovskiy, G.P., I.M. Yermolenko, A.M. Sevashenko, and K.M. Solov'yev. Electron Spectra of Chlorophyll and Pheophytin and Metal-derivatives

375

Cherkasov, A.S. Effect of Spacing of Substituents on the Absorption Spectra and Fluorescence of Meso-derivatives of Anthracene

381

Piskal'shteyn, A.I., N.I. Malkina, and G.P. Machin. Absorption Spectra in the Ultraviolet Range and the Molecular Structure of Triazine Derivatives

385

Card 24/30

AUTHOR: Igonin, L.A. (Moscow) SOV-47-58-6-2/28

TITLE: Polymers (Polimery)

PERIODICAL: Fizika v shkole, 1958, ¹⁶Nr 6, pp 8 - 20 (USSR)

ABSTRACT: The Party has planned a huge program for expanding the production of chemical items, especially plastic materials, synthetic fibers and synthetic caoutchouc. During 1959 - 1965, the production of the most important basic chemical products must increase by at least 2 to 3 times, and the output of artificial fibers and plastic - 4.5 to 8 times. During this period it is planned to erect and put into operation 120 new enterprises, to complete 37 and to expand 100 existing plants. The total cost will exceed 100 billion rubles. In 1965 the output of shoes will be 93 million pairs (2.3 times more than in 1957). Artificial leather will be used. The author then deals with polymers pointing out that in 1931 the Soviet Union was the first to manufacture synthetic caoutchouc on an industrial scale by a method developed by Academician S.V. Lebedev. He then discusses the chemical structure of high molecular substances and describes the mechanisms of polymerization reactions, emphasizing that

Card 1/ 2

Polymers

SOV-47-58-6-2/28

the mechanism of chain reactions was discovered and thoroughly studied by the renowned Soviet scientist Academician N.N. Semenov and his assistants. Considerable space is devoted to the physical properties of high molecular substances. The author starts by examining the mechanical properties of caoutchoucs and discusses the basic regularities characteristic of the highly elastic deformation compared with resilient deformation. To make the mechanism of high elastic deformation comprehensible, he examines some characteristics inherent in molecules of low-molecular substances, taking methane and ethane as examples. Subsequently he turns again to the theory of the high elasticity of caoutchouc. For a better comprehension of the physical properties of polymers, the author examines the model of a linear amorphous polymer offered by the Academicians V.A. Kargin and G.A. Slonimskiy, and shows that a linear polymer may have three physical conditions: glass-like, highly elastic and viscous. The author then makes some remarks on the achievements of chemistry and the technology of polymers, considering stereo-regulated polymers a great success. There are 5 Soviet references, 2 tables, 4 diagrams and 1 graph.

ASSOCIATION: Institut plastmass, Moskva (Institute of Plastics, Moscow)

Card 2/2

1. Chemical industry---USSR

SOV/20-120-5-37/67
AUTHORS: Igonin, L. A., Ovchinnikov, Yu. V., Arzhakov, S. A.
TITLE: The Influence of High Pressures on the Autohesion of High Polymers (Vliyaniye vysokikh davleniy na samoslipaniye (autogeziyu) vysokopolimerov)
PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 5, pp.1062-1064 (USSR)
ABSTRACT: This is a study of the influence of temperature and of pressure upon the autohesion of some powdery thermoplastic substances. The conditions of the formation of a transparent sample when powdery substances are pressed in a cylindrical heated die were investigated. The process of pressing is described. At temperatures not exceeding 130° only a partial coalescence of the grains of the polymer takes place. Only at higher temperatures the strength of the samples reaches the cohesion strength of the material. When non-transparent samples are obtained by a pressing of the polymer powder no autohesion of the grains occurred. The autohesion of polyvinyl chloride begins at temperatures which are 5 - 10° above the vitrification temperature. The limit between trans-

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SOV/20-120-5-37/67

The Influence of High Pressures on the Autohesion of High Polymers

parent and non-transparent samples in the interval of 100-150 kg/cm². At a constant temperature and at a simultaneous pressure rise at first non-transparent samples are produced. This range corresponds to the growth of the total contact surface of the grains with increasing pressure. This is the necessary condition for the occurrence of autohesion. At a further increase of pressure transparent samples are produced, that is to say, the boundaries between the grains disappear because of the complete or partial coalescence. A complete coalescence occurs above 130°. The dependence of the vitrification temperature of polyvinyl chloride upon the pressure as shown in this paper was also observed in a few other polymers. A diagram illustrates the respective curves for polyvinyl chloride, polystyrene and polymethyl methacrylate. There are 4 figures and 5 references. 4 of which are Soviet.

PRESENTED: February 25, 1958, by V. A. Kargin, Member, Academy of Sciences, USSR

Card 2/3

AUTHORS: Igonin, L. A., Bass, S. I. SOV/20-121-4-22/54

TITLE: Infrared Absorption Spectra of Oxybenzyl Amines (Infra-
krasnyye spektry pogloshcheniya oksibenzilaminov)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 4,
pp. 652 - 655 (USSR)

ABSTRACT: In the process of solidification of phenol formaldehyde
resins by hexamethylene tetramine oxybenzyl amines are
formed as intermediate products (Ref 1). They are multi-
nuclear compounds the phenol nuclei of which are connected
by dimethylamine nuclei and $(-CH_2-NH-CH_2-)$ and tri-
methylamine bridges $(N(CH_2-)_3)$. It is believed that in
the course of solidification these bridges under the
thermal influence become methylene and azomethine bridges.
It was interesting to prove these assumptions by means
of infrared spectroscopy. There are no papers dealing with
the same subject. Results of the spectra mentioned in the
title of some oxybenzyl amines are mentioned which were
obtained by interaction of phenol and its mononuclear

Card 1/4

Infrared Absorption Spectra of Oxybenzyl Amines

SOV/20-121-4-22/54

derivatives with hexamethylene tetramine (Fig 1). Based upon data in publications some intensive bands could be identified in the spectra of the following model substances: 2,2'-dioxy-3,5,3',5'-tetramethyl dibenzyl amine (I) and of trioxybenzyl amine which corresponds to it (II). Figure 2 shows spectra of absorption of multinuclear benzyl amines which are relatively low-molecular (Ref 4). Apart from the above mentioned absorption bands (Fig 1) intensive bands exist within the range of $12,2\mu$ which corresponded to the three times substituted benzene ring, e.g. to the terminal groups of these compounds. Further bands prove that the p-substitutes of phenol react with hexamethylene tetramine accompanied by the formation of mainly dibenzyl amines. The o-substitutes form, however, mainly tribenzyl amines (in accordance with Ref 1). Figure 3 shows absorption spectra of oxybenzyl amines with a high molecular weight which are formed by interaction of phenol with hexamethylene tetramine in a diphenyl solution. On the whole they are nothing else but the spectra of figure 2 and are, however, considerably ramified. Owing to the above mentioned results the possibility arises to use the characteristic bands in

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Infrared Absorption Spectra of Oxybenzyl Amines

SOV/20-121-4-22/54

the range of $11,84\mu$ and $11,92\mu$ for the structural investigation of the solidification processes of the phenol formaldehyde resins in all cases where solidification undergoes the stage of formation of oxybenzyl amines. There are 3 figures and 4 references, 4 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut plastmass (Scientific Research Institute of **Plastics**)

PRESENTED: April, 3, 1958, by V.A.Kargin, Member, Academy of Sciences, USSR

SUBMITTED: February 11, 1958

Card 3/4

IGONIN, L.A.; YERMOLINA, A.V.; OVCHINNIKOVA, Yu.V.; KARGIN, V.A.

Molecular ordering of polymers precipitated from solution.
Vysokom. soed. 1 no.9:1327-1332 S '59. (MIRA 13:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut plasticheskikh
mass.

(Polymers) (Ethylene) (Methacrylic acid)

5(4)

SOV/20-128-1-34/58

AUTHORS:

Igonin, L. A., Ovchinnikov, Yu. V., Kargin, V. A., Academician

TITLE:

The Influence of High Pressures on the Dielectric Losses in Polymers

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 1, pp 127-129 (USSR)

ABSTRACT:

It was stated in a paper previously published (Ref 1) that in the pressing of pulverulent polymers under high pressure within a certain temperature interval vitrification of the polymer occurs. For a certain temperature the range, within which vitrification of the polymer occurs, is limited by two pressure heights. The assumption was expressed that this phenomenon may be explained by a reduced mobility of the molecule chains of the polymer. In order to check this by means of another, independent method, the temperature dependence of the dielectric losses δ was measured at various pressures. Figure 1 shows the mold. Polyvinyl chloride, polymethyl acrylate and polymethyl-methacrylate were pressed. Figure 2 shows the temperature dependence of $\lg \delta$ for polymethyl acrylate at a frequency of 5,000 cycles and pressures

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SOV/20-128-1-34/58

The Influence of High Pressures on the Dielectric Losses in Polymers

of from 1 to 2448 kg/cm². With increasing pressure the maximum of tg δ shifts towards higher temperatures. Figure 3 shows the frequency dependence of tg δ at a pressure of 2448 kg/cm² for the same compound. Increasing frequency (400, 1000, 5000 cycles) causes the same shifting of the maximum of the tg δ . The same behavior is shown by polyvinyl chloride. Figure 4 shows the temperature shifting ΔT of the maximum of the elastic dipole losses in the case of increasing pressure. In the case of polymethyl acrylate this shifting is directly proportional to pressure up to 2000 kg/cm². In polyvinyl chloride, $\Delta T_{\max}(p)$ becomes non-linear already at pressures above 1000 kg/cm². It is confirmed by experimental results that under high pressure the mobility of the molecule chains is hampered by tight packing, vitrification setting in according to the strength of the polymer chain at various pressures. In polymethylmethacrylate the measured maxima of the tg δ of the dipole-elastic losses are superimposed to the maxima of the dipole-radical losses (Ref 6). The authors thank Professor P. G. Mikhaylov for discussions and advice, and S. P. Kabin for assisting in carrying out experiments.

Card 2/3

SOV/20-128-1-34/58
The Influence of High Pressures on the Dielectric Losses in Polymers

There are 4 figures and 6 Soviet references.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut plastiches-
kikh mass
(State Scientific Research Institute for Plastics)

SUBMITTED: June 9, 1959

Card 3/3

86291
S/190/60/002/008/002/017
B004/B054

15.8102

AUTHORS:

Igonin, L. A., Yeliseyev, Yu. A., Dyurgerov, O. A.,
Krasulina, N. A.

TITLE:

Formation of Stable Free Radicals in the Process of Hardening and Thermal Destruction of Phenol Formaldehyde Resins

PERIODICAL:

Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 8,
pp. 1167-1170

TEXT: The object of the present paper is the proof that in the hardening process of phenol formaldehyde resins not only dense-network polymers are formed but also thermal destruction processes are taking place. The shear stress of some resins as a function of time at rising temperature was determined by an I. F. Kanavets plastometer (Ref. 2). Samples used were: Novolac resin of the type K-18 (K-18) with 4% by weight of hexamethylene tetramine and 30% of dibutyl phthalate; poly-oxybenzylamine from p-cresol, and the same compound made of tricresol. Fig. 2 shows the shear stress as a function of temperature. At 150-170°C, poly-oxybenzylamine behaved like amorphous linear polymers with poorly marked network. At higher temperature

Card 1/3

86291

Formation of Stable Free Radicals in the
Process of Hardening and Thermal Destruction
of Phenol Formaldehyde Resins

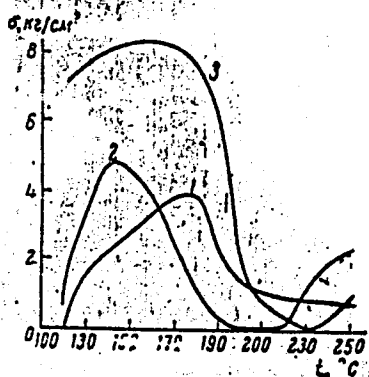
S/190/60/002/008/002/017
B004/B054

the network was destroyed; above 200°C, however, a dense network was formed which is revealed by an increase in shear stress. This is explained by recombination of macroradicals which had formed during thermal destruction. This assumption was checked by electron paramagnetic resonance (epr) spectra. The epr spectra were taken by a spectrometer designed by the Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics of the AS USSR). A concentration of 10^{14} paramagnetic particles/cm³ was found for Novolac, and of $5 \cdot 10^{15}$ for poly-oxybenzylamines. The epr spectra remained unchanged after storing the samples for months. Origin and structure of these very stable free radicals require further investigation. The authors thank V. V. Voyevodskiy for taking the epr spectra in his laboratory, and V. A. Kargin for a discussion. There are 3 figures and 4 references: 3 Soviet and 1 British.

ASSOCIATION: Nauchno-issledovatel'skiy institut plasticheskikh mass
(Scientific Research Institute of Plastics)

SUBMITTED: March 15, 1960

Card 2/3



86 291

S/190/60/032/003/002/017

B004/B054

Legend to Fig. 2: Change of the limit shear stress during the hardening process of phenol formaldehyde resins. 1: Novolac resin K-18 with 30% of plasticizer and 4% of hexamethylene tetramine; 2: poly-oxybenzylamine from p-cresol; 3: poly-oxybenzylamine from tricresol..

Card 3/3

S/191/60/000/011/014/016
B013/B054

AUTHORS: Yermolina, A. V., Rodivilova, L. A., Vlasova, K. N.,
Igonin, L. A.

TITLE: X-Ray Investigation of the Degree of Order of Methyl Poly-
amide Resins

PERIODICAL: Plasticheskiye massy, 1960, No. 11, pp. 58-59

TEXT: The authors studied the change of the degree of order of methyl
polyamide materials depending on the concentration of methylol groups and
of the side radical, as well as during the process of setting. They used
products of joint condensation of ϵ -caprolactam and AG salts which, on
treatment with paraformaldehyde in various alkaline media, form chains of
the type $\text{HN}(\text{CH}_2)_n \underset{\text{CH}_2\text{OH}}{\text{N}} \text{CO}(\text{CH}_2)_m \text{CO} \dots \text{N} \underset{\text{CH}_2\text{OR}}{\text{N}}$. The X-ray structural

analysis was made on a YPC-50-M (URS-50-I) apparatus. The intensity dis-
tribution curve for the initial polyamide (Fig. 1) is distinguished by
three distinct maxima. One of them shows a strong, the two others a weak

Card 1/2

X-Ray Investigation of the Degree of Order of S/191/60/000/011/014/016
Methyl Polyamide Resins B013/B054

intensity. On introduction of methylol groups, the X-ray pattern of the polyamide resin changes considerably. On introduction of methylol and methoxyl side groups, the order of the polymeric system changes (Fig. 2). By an increase in the number of methylol groups introduced into the polymeric chain from 2.23 to 8.1%, the degree of order changes with maintenance of the mean intermolecular distances of 4.37 Å. On an enlargement of the alkyl radical introduced, from the methoxy-ethyl to the methoxy-butyl radical, the intermolecular distances change from 4.37 Å to 4.41 Å. Further enlargement of the alkyl radical effects no great change of diffraction patterns (Fig. 3). By introduction of aromatic (methoxy benzyl) and cyclic (methoxy furyl) radicals, the degree of order of the corresponding methylol polyamides decreases considerably (Fig. 3, curves 6 and 7). Irrespective of the nature and size of side radicals, the intermolecular distances are shortened from 4.41 Å to 4.2 Å due to hardening. This suggests that in all cases methylene cross bonds are formed between the polyamide chains. There are 4 figures and 4 Soviet references.

Card 2/2

5.3832
AUTHORS:

Igonin, L. A., Gintsberg, E. G.,
Krasulina, N. A., Bass, S. I.,
Kargin, V. A.

68847

S/076/60/034/02/006/044
B010/B015

TITLE:

Investigation of Oxybenzylamines¹ Obtained From Phenol and Its Mononuclear Derivatives

PERIODICAL:

Zhurnal fizicheskoy khimii, 1960, Vol 34, Nr 2, pp 287-294 (USSR)

ABSTRACT:

On the basis of publication data it may be assumed that oxybenzylamines form as intermediates in the hardening of Novolack phenol formaldehyde resins with hexamethylenetetramine. In oxybenzylamines, the phenol nuclei are connected by dimethylamine- or trimethylamine bridges. At high temperatures, these bridges are transformed into methylene- or azomethine bridges. In the present case, a series of oxybenzylamines, obtained from phenol and its mononuclear derivatives, were investigated thermomechanically as well as by spectral analysis. The absorption spectra were taken by the IKS-11 spectrograph, and are given for 2,2'-dioxo-3,5,3',5'-tetramethyldibenzylamine and the corresponding tribenzylamine (Fig 1). The absorption bands observed at 11.84μ in dibenzylamine and at 11.92μ in tribenzylamine are traced back to the dimethylenamine- and trimethylenamine bridges between the phenol nuclei. This

Card 1/3

Investigation of Oxybenzylamines Obtained From
Phenol and Its Mononuclear Derivatives

68847

S/076/60/034/02/006/044
B010/B015

assumption is confirmed by the absorption spectra (Fig 2) of the multinuclear oxybenzylamines. The latter were prepared by a method described earlier (Table 1, preparation conditions). All spectra of the oxybenzylamines obtained from phenol and its para-substituted derivatives show the 11.84μ band whereas with oxybenzylamine obtained from o-chlorophenol this band lies at 11.92μ . Thus, it can be seen that it is the reaction between hexamethylenetetramine and the mononuclear phenols in a diphenyl solution that leads to the formation of the polymeric oxybenzylamines (Table 2, suggested structural formulas of polymers). The polyoxybenzylamines obtained from phenol and its para-substituted derivatives are amorphous linear polymers reticulated by individual cross bindings. The polymers have very strong chains whose T_g value lies above their thermal stability. The o-substituted derivatives form strongly ramified and reticulated polymers. The polyoxybenzylamines obtained from phenol reticulate under the effect of heat, and pass over into a non-meltable and insoluble state whereas polybenzylamines obtained from o- and p-substituted derivatives of phenol are thermally instable, and decompose at a temperature above 160°C forming low-molecular products. There are 6 figures, 2 tables, and 6 references, 1 of

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Investigation of Oxybensylamines Obtained From
Phenol and Its Mononuclear Derivatives

68847
S/076/60/034/02/006/044
B010/B015

which is Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut plasticheskikh mass
(Scientific Research Institute of Plastics) ✓

SUBMITTED: April 3, 1958

Card 3/3

OVCHINNIKOV, Yu.V.; MINSKIE, K.S.; IGONIN, L.A.

Effect of pressures on the cohesion of polypropylene. Vysokom.
soed. 2 no.2:306-309 '60. (MIRA 13:11)
(Propene) (Polymers)

15 8420

23423
S/081/61/000/005/020/024
B101/B208

AUTHORS: Ovchinnikov, Yu. V., Igonin, L. A.
TITLE: Some peculiarities of the highly elastic behavior of
polymers on pressing under high pressures
PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1961, 620, abstract
5P54 (5P54) ("Tr. po khimii i khim. tekhnol.", 1959, no. 2,
453-459)

TEXT: The application of high specific pressures on pressing powdery or
granulated polymers may cause the loss of their capability of autohesion.
Opaque products with low strength will be obtained. By determining the
lower and upper pressure limit for different temperatures, within which
still transparent samples are obtained, a curve can be drawn which
indicates that range of temperatures and pressures within which partial
or complete autohesion of the material grains occurs and a visible
boundary between them disappears (P-T curve). By determining the tempera-
ture dependence of the upper pressure limit for some polymers (polyvinyl
chloride, polymethyl methacrylate, polystyrene, acetyl cellulose, cellu-

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23423

S/081/61/000/005/020/024
B101/B208

Some peculiarities of the highly...

lose acetobutyrate, cellulose tripropionate, and others) it was found that the construction of the upper branches of the "P-T" curve reflects the structural peculiarities of the polymers and may be used especially as a method of estimating the relative ductility of some polymer chains. The same method was also applied to estimate structural changes occurring in polyvinyl chloride during the process of thermooxidative aging. (Cf. Khim, 1959, no. 4, 14100). [Abstracter's note: Complete translation.]

Card 2/2

IGCNIN, L.A.; GINTSBERG, E.G.; KRASULINA, N.A.; BASS, S.I.; KARGIN, V.A.
(Moskva)

Hydroxybenzylamines obtained from phenol and its mononuclear derivatives. Zhur. fiz. khim. 34 no.2:287-294 F '60. (MIRA 14:7)

1. Nauchno-issledovatel'skiy institut plasticheskikh mass.
(Benzylamine)

27577
S/190/61/003/009/012/016
B124/B101

11.2210

AUTHORS: Igonin, L. A., Ovchinnikov, Yu. V.

TITLE: Change in density of amorphous polymers under the influence of high molding pressures

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 9, 1961, 1395 - 1400

TEXT: Experiments were performed under conditions resembling those found in operation on samples molded from polyvinyl chloride, polymethyl methacrylate, and polystyrene powders, block polymethyl methacrylate, and block polystyrene glasses at different temperatures and pressures. The density was determined either by hydrostatic weighing or by measuring the flotation temperature. A mixture of sulfuric acid and water was used as flotation liquid. The flotation temperature is a relative quantity since the density depends on the molding conditions. The reciprocal flotation temperature, $1/T_f$, is proportional to the density of the sample. A maximum of $1/T_f$ was found at about 2000 kg/cm² for samples molded from PVC, polymethyl methacrylate, and bulk polystyrene.

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Fig. 3 shows the dependence of $1/T_f$ on the molding temperature for block polymethyl methacrylate. The change in density of PVC at molding temperatures of 120 and 140°C, and of polystyrene at 110 and 140°C is illustrated in Fig. 5. When block polystyrene and polymethyl methacrylate molded at 120°C are heated to 20 - 30°C above the vitrification point, no substantial changes in density occur. Results show that the decrease of the free volume and the resulting density rise, on the one hand, and the reduced segmental mobility of molecular chain segments and the inhibited relaxation on repacking, on the other, have to be considered when the effect of pressure on polymers is determined. This is particularly distinct under the selected "P-T" conditions (pressure is raised first, temperature afterwards), and for this reason the curves for the change in density with pressure at constant temperature always have a maximum. At low external pressure applied, density decreases with rising molding temperature, whereas for pressures between 450 and 1100 kg/cm² density increases up to temperatures of 140 to 150°C. The change in density becomes small at pressures above 3000 kg/cm² at all test temperatures, and approaches the density of the vitrified polymer. The fact whether pressure was applied first and afterwards temperature was raised to a

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certain level, or whether the material was first heated to a certain temperature and afterwards pressure was applied during the treatment of the polymer is of high importance. The effect of external pressure on the decrease of mobility of the chain is the higher, the more rigid the chain is. The authors thank V. A. Kargin for a discussion. There are 5 figures and 14 references: 7 Soviet and 7 non-Soviet. The two most recent references to English-language publications read as follows: S. Matsuoka, B. Maxwell, J. Polymer Sci. 32, 131 - 159, 1958; B. Maxwell, A. Jung, Modern Plastics, 35, 174, 1957.

SUBMITTED: December 21, 1960

Card 3/5

IGONIN, L.A., invzh. PSHENITSYN, P.A.; KONYAYEVA, S.A.

Use of epoxy glue for fusing together precast concrete in hydraulic
engineering construction. Gidr.stroi. 31 no.3:16-19 Mr '61
(MIRA 14:4)

(Glue) (Precast concrete construction)

15.8080

15.8510

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B103/B208

AUTHORS: Yermolina, A.V., Igonin, L.A., Nosova, L.A., Farberova, I.I.,
and Vlasova, K.N.

TITLE: Relationship between mechanical properties of crystalline
polymers and their supermolecular structures

PERIODICAL: Doklady Akademii nauk SSSR, v. 138, no. 3, 1961, 614 - 615

TEXT: The authors compared some structural and mechanical properties of the industrial polyamide resin 68 (polyhexamethylene sebacic amide), from which among others slide bearings are produced and which has a high resistance to wear. They attempt to clarify the importance of the local order of the segments ("degree of crystallinity") and of the secondary supermolecular structures to the macroscopic properties of polymers. 4 x 6 x 55 mm samples were cast from the resin under pressure by means of the ~~LM~~-3 (LM-3) casting device, and subjected to heat treatment in inert media (silicon oils) at different temperatures and for various periods of times. The "degree of crystallinity" was determined from the integral intensities of the characteristic interferences on the intensity curve of the specimen. These curves
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were recorded on the basis of the dispersion angles of X-rays on the YPC-50- W(URS-50-I) X-ray diffractometer. The spherulite structure of the polyamide was confirmed by a microphotograph of the polished surface of the sample which has previously been etched with tricresol. The metallurgical MMM-8 (MIM-8) microscope with a 1000-fold magnification was used for this purpose. For each series of samples the reciprocal value of wear (resistance to wear) was determined by means of the sieve-type testing machine (of the Grasseli type). The heat treatment was applied at 150 and 190°C for 15 - 30 min for each of these temperatures. The conversion of the initial samples with a hexagonal cell to the triclinic form, as described in publications, was accomplished already after heating for 15 min. Further heat treatment gradually completed the X-ray picture. It was characterized by a marked increase of the interferences (100) and (010), and, accordingly, also of the "degree of crystallinity". The second appearance of the interference of the hexagonal cell between the reflexes (100) and (010) of the triclinic cell on prolonged heating was striking. After 8 hr at 190°C and after 12 hr at 150°C the crystallinity ceased to increase. There were no recognizable structural changes observed during a heat treat-

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ment of up to 30 hr. The spherulite structure of the polyamide was found to be more sensitive to a change in the method of the thermal treatment than the "degree of crystallinity". The size of the spherulites markedly increased (from 1 to 5 μ) on short heating, some structures, however, were still larger. After 8 hr heating at 190°C and after 10 hr at 150°C a gradual destruction of spherulite structures set in, and after 30 hr they could not be observed any longer on the surface of the sample. A specific correlation between the "degree of crystallinity" and resistance to wear of the plastics could not be confirmed. It may be seen from these preliminary studies that samples with a uniform size of spherulite structures (2 - 3 μ) have the highest resistance to wear. It is concluded therefrom that homogeneity, size, and fine structure of the supermolecular structures play an important role in the wear of the polyamide. It is therefore of considerable interest to explain the effect of the above-mentioned structures on the mechanical properties, when studying the relationships between these properties and the structure of crystalline polymers. The authors express their gratitude to V. A. Kargin, Academician, for discussion of the results, and S. B. Ratner for his assistance in this work. There are 9 references: 7 Soviet-bloc and 2 non-Soviet-bloc.

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The three references to English-language publications read as follows:
Ref. 7: A. Keller. Proceedings of the International Conference of
Crystal Growth, N. Y., 1958 ; Ref. 8: I. Sandeman, A. Keller, J. Polym.
Sci., 19, 401 (1956); Ref. 9: G. Bunn, E. Garner. J. Proc. Roy. Soc.,
London, A 189, 39 (1947).

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Plastics of the Academy of Sciences USSR)

PRESENTED: January 6, 1961, by V. A. Kargin, Academician

SUBMITTED: December 15, 1960

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IGONIN, Leonid Andreyevich, kand. khim. nauk; GLUKHOV, Yevgeniy
Yemel'yanovich, kand. tekhn.nauk; BRYANTSEVA, V.P., inzh.
red.

[DVF-3 Multipurpose machine for testing the mechanical prop-
erties of plastic materials] Universal'naya mashina DVF-3
dlya ispytaniy mekhanicheskikh svoistv plastmass. Moskva,
Filial Vses. in-ta nauchn. i tekhn. informatsii, 1956. 11 p.
(Pribory i stendy. Tema 2. No.P-56-518) (MIRA 16:3)
(Plastics--Testing)